### ANNUAL TECHNICAL REPORT 2017



MANAGING DIRECTOR'S LETTER

## DAVID CROOK

Li Cs Ta Co

### **DEAR SHAREHOLDER,**

On behalf of the Directors of Pioneer Resources Limited, I am pleased to present the Annual Technical Summary for 2017.

The year was one of consolidation following a widening of your Company's

exploration strategy to include key demand-driven commodities associated with the clean energy industry. This is driven principally by expanding global lithium, and more recently cobalt, consumption in response to the increasing commercialisation of lithium battery technologies.

The Company established a portfolio of quality lithium projects in Canada and Western Australia, and exploration success quickly followed.

The Pioneer Dome Project was a blank canvas when exploration programmes commenced, and detailed field work throughout 2016 and 2017 has resulted in the identification of 5 clusters of lithium-caesium-tantalum (LCT) pegmatites. The year's highlight was the discovery of the Sinclair Zone caesium deposit and mining studies to commercialise this are progressing.

The Company entered into an earn-in joint venture for the Mavis Lake and Raleigh Projects in Ontario, Canada. Drilling at the priority Fairservice Prospect followed in early 2017, with each of four holes drilled intersecting multiple spodumene-bearing pegmatites of significant thickness and grade.

Cobalt has risen in prominence as a demand-driven metal as a component in several configurations of lithium battery alternatives. A detailed review of the Company's Golden Ridge drilling database identified six separate prospects with broad zones of high grade cobalt laterite mineralisation, which will be further investigated during 2018. Importantly, there have been some recent positive advances in hydrometallurgical extraction technology for this style of mineralisation.

Following successful exploration programmes at the Acra Gold Project, and with an improving Australian gold price, Pioneer was able to attract Northern Star Resources Limited to form an earn-in joint venture for the Project. Northern Star may earn a 75% interest in the tenements, and Pioneer maintains a free carried, but significant equity position, until the decision to

Pioneer is an active and focused exploration company, and in the 2016-17 year conducted extensive drilling, soil geochemistry and geophysics programmes at its projects, as follows:

- 12,735 metres of drilling at Pioneer Dome, Mavis Lake and Golden Ridge Projects; and
- Over 17,000 soil and rock geochemistry samples from the Pioneer Dome, Kangan, Mavis Lake, Raleigh and Juglah Dome Projects.

Over the coming months the Company will undertake the next phase of drilling on the 100%-held Pioneer Dome Project, continue to advance the mine plan for the Sinclair Zone pollucite deposit, and initiate further exploration at the Kangan gold and lithium project in WA's Pilbara region.

I would like to acknowledge our valued and well regarded team: Melinda O'Ryan (who has been with the Company for 10 years), Stuart Kerr, Jess Booth, George Burgess, Anthony Jenkinson, Nigel Brand, Fiona Edison and Helen Sanders, and our Canadian technical partners headed by Mike Sieb. Thank you also to our other consultants and contractors who have all contributed to the Company's operations during the year. The combined effort of all the Pioneer team is greatly appreciated.

Finally, I join with our Chairman to thank investors who have supported our Company during past years, and to welcome new shareholders. We look forward to conveying results of our exploration programs as they progress in the year ahead.

Yours faithfully

**DAVID CROOK** 

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**Managing Director** 

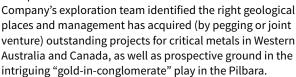


CHAIRMAN'S LETTER

# CRAIG MCGOWN Li Cs Ta Co

### **DEAR SHAREHOLDER,**

"Right place and right time" is the formula for success in many endeavours. Two years ago was the right time to diversify the Company's exploration portfolio and focus on "critical" metals as new technology disrupts the energy and transportation markets. The



Success in exploration is measured at the drill bit. In the past year our notable successes include:

- Sinclair Caesium Zone discovery and delineation of a modest size, but very high value pod of pollucite (caesium mineral) that will be mined and marketed in 2018.
- Pioneer Dome geological mapping and geochemistry has defined a 10 km long belt of lithium-caesiumtantalum ("LCT") pegmatites, including the Sinclair Deposit. Best drill results include 31m at 2.54% Li<sub>2</sub>O and 20m at 2.48% Li<sub>2</sub>O contained in lepidolite and petalite.
- Mavis Lake Lithium initial diamond drilling returned 26.30m at 1.70% Li<sub>2</sub>O and 23.10m at 1.36% Li<sub>2</sub>O, contained in spodumene.

And where will success come in the current year?

• **Lithium-Caesium-Tantalum** – the Pioneer Dome Project, followed by the Mavis/Raleigh projects in Canada will be our focus for these critical metals.

- **Cobalt** follow-up of past drilling at the Blair, Rocket and other prospects within the Golden Ridge Project which returned very high grade lateritic cobalt values e.g.12m at 0.359% Co and 12m at 0.266% Co.
- Gold the Kangan Project in the western Pilbara is prospective for sediment/conglomerate-hosted gold as evidenced by rock chips of up to 2.73 g/t gold from previous exploration. Plus joint venture partner Northern Star Resources Limited (ASX:NST) continues to explore our Acra project in the Eastern Goldfields.

Success in exploration is never guaranteed but your Company is in the right place at the right time.

For the new shareholders in our Company, welcome and to our existing shareholders, including the Board, who participated in the Company's fundraisings during and subsequent to the financial year which totalled approximately \$4.5M (before issue costs), I thank you for your continuing support.

I would also like thank my Board and Company Secretary for their positive input and contribution into the successful operation of your Company and acknowledge the significant and tireless contribution made by our Managing Director, David Crook.

The Pioneer Resources team and Board remain focused on delivering shareholder value through our targeted exploration activities, and I look forward to sharing news of our progress with you in the year ahead.

Yours sincerely

### CRAIG MCGOWN

Non-Executive Chairman Pioneer Resources Ltd

### **Competent Persons Statement**

The information in this report that relates to Exploration Results is based on information supplied to and compiled by Mr David Crook. Mr Crook is a full time employee of Pioneer Resources Limited. Mr Crook and is a member of The Australasian Institute of Mining and Metallurgy and the Australian Institute of Geoscientists and has sufficient experience which is relevant to the exploration processes undertaken to qualify as a Competent Person as defined in the 2012 Editions of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'.

Mr Crook gives consent to the inclusion of the matters presented in the announcement in the form and context in which they appear.

#### References

- Acra: Refer Company's announcements to ASX dated 15 February 2016, 21 October 2016
- Golden Ridge: Refer Company's announcements to ASX dated 13 April 2017.
- Mavis Lake and Raleigh: Refer Company's announcements to ASX dated 15 March 2016, 20 April 2016, 13 July 2016, 26 July 2016, 12 October 2016, 2 December 2016, 7, 8 February 2017, 10 March 2017, 11 April 2017
- Pioneer Dome: Refer Company's announcements to ASX 19 May 2016, 27 July 2016, 28 August 2016, 1 September 2016, 4 October 2016, 17 October 2016, 14 November 2016, 2 December 2016, 13 December 2016, 13 January 2017, 24 January 2017, 23 February 2017, 20 March 2017, 22 March 2017, 20 June 2017, 9 October 2017
- Kangan: 6 October 2017
- Plus Company quarterly reports.

100% PIONEER / EASTERN GOLDFIELDS

# PIONEER DOME SINCLAIR ZONE

### THIS YEAR'S KEY ACHIEVEMENT HAS BEEN THE DISCOVERY OF A DEPOSIT OF THE HIGH VALUE CAESIUM MINERAL, POLLUCITE, AT THE SINCLAIR ZONE.

Pollucite is very rare, being previously known in commercial quantities at the Bernic Lake Mine, Canada, and Bikita Mine in Zimbabwe only. Pollucite forms in extremely evolved LCT pegmatite systems, and is predominantly converted into caesium formate, a chemical used in the oil and gas industry.

Encouraging intersections of lithium mineralisation, in the form of both petalite and lepidolite, and associated tantalum minerals have also been made at the Sinclair Zone, which is consistent with a well zoned LCT pegmatite system. World class spodumene deposits globally, are typically hosted within well zoned LCT pegmatite mineralised systems.

Priority during 2017 has been the commercialisation of the Sinclair Zone pollucite deposit, and interest has been keenly sought from international parties. Mining studies and the statutory approvals process is well advanced.

Interest has also been forthcoming for lepidolite, and the Company completed a transaction with Lepidico Australia N.L., which provides Pioneer with exposure to the L-Max® technology, a proprietary process which may be used to extract lithium and other valuable by-products from lepidolite.

In parallel with the Sinclair Zone mining proposal, mapping and geochemistry programmes have highlighted that 5 pegmatite swarms within a 10 km corridor have demonstrable LCT pegmatite affinities.

### **OUTLOOK**

The Company is continuing to progress its mining plans for the Sinclair Zone pollucite deposit.

Concurrently, following on from the successful outcomes of the geochemistry and mapping programmes at PEG003-PEG009, the next step is to drill test the resultant targets for lithium, focusing on spodumene-prospective areas, and caesium in pollucite.



### MINERAL RESOURCE SUMMARY BY CATEGORY: SINCLAIR CAESIUM DEPOSIT

 Classification
 Tonnes (t)
 Cs<sub>2</sub>O (%)

 Measured
 10,500
 17.1

 Total
 10,500
 17.1

Notes: Appropriate rounding applied. Resource Estimate by mining consultant Trepanier Pty Ltd

### DRILLING RESULTS FROM THE SINCLAIR ZONE INCLUDED:

#### **CAESIUM**

PDRC015: 6m at 29.37% Cs<sub>2</sub>O from 47m
 PDRCD068: 3.85m at 27.78% Cs<sub>2</sub>O from 44.35m
 PDRCD071: 6.35m at 18.60% Cs<sub>2</sub>O from 41.4m
 PDRC074: 7m at 17.12% Cs<sub>2</sub>O from 49m
 PDRC083: 12m at 15.77% Cs<sub>2</sub>O from 43m
 PDRC084: 4m at 14.53% Cs<sub>2</sub>O from 50m

### LITHIUM (PETALITE)

PDRC067: 11m at 2.63% Li<sub>2</sub>O from 44m
 PDRC113: 9m at 1.18% Li<sub>2</sub>O from 44m
 PDRC114: 19m at 1.77% Li<sub>2</sub>O from 39m
 PDRC115: 17m at 1.48% Li<sub>2</sub>O from 35m
 PDRC116: 20m at 2.48% Li<sub>2</sub>O from 36m
 PDRC122: 11m at 1.34% Li<sub>2</sub>O from 45m

Note. Petalite identified using a Bruker Bravo Raman spectrometer.

### LITHIUM (LEPIDOLITE)

PDRC070: 12m at 2.22% Li<sub>2</sub>O from 44m
 PDRC073: 13m at 2.13% Li<sub>2</sub>O from 39m
 PDRC077: 13m at 1.89% Li<sub>2</sub>O from 52m
 PDRC079: 14m at 2.32% Li<sub>2</sub>O from 46m
 PDRC112: 31m at 2.54% Li<sub>2</sub>O from 47m
 PDRC118: 9m at 2.44% Li<sub>2</sub>O from 50m

#### **TANTALUM**

PDRC091: 12m at 372ppm Ta<sub>2</sub>O<sub>5</sub> from 55m
 PDRC112: 16m at 284ppm Ta<sub>2</sub>O<sub>5</sub> from 58m
 PDRC118: 15m at 494ppm Ta<sub>2</sub>O<sub>5</sub> from 50m
 PDRCD069: 5.25m at 534ppm Ta<sub>2</sub>O<sub>5</sub> from 53m



Cs

Ta

EARNING 80% PIONEER / CANADA

## MAVIS LAKE GRALEIGH

THE MAVIS AND RALEIGH LITHIUM PROJECTS ARE SITUATED 19 AND 80 KM RESPECTIVELY EAST FROM THE TOWN OF DRYDEN, ONTARIO, CANADA.

Pioneer, and its strategic partner International Lithium Corp., are very encouraged by the results of the 2017 drilling programme at the Mavis Lake Project. Pegmatites intersected at the Fairservice Prospect were well mineralised with spodumene over significant thicknesses, and demonstrated continuity with mineralisation from earlier drilling.

Drilling results from the Fairservice Prospect included:

- MF17-39: 17.90m at 1.47% Li<sub>2</sub>O from 80.00m
- MF17-40: 12.85m at 1.16% Li<sub>2</sub>O from 80.05m
- MF17-49: 26.30m at 1.70% Li<sub>2</sub>O from 111.9m including 7.70m at 2.97% Li<sub>2</sub>O from 130.5m
- MF17-50: 16.55m at 1.45% Li<sub>2</sub>O from 74.55m and 23.10m at 1.36% Li<sub>2</sub>O from 122m

### **OUTLOOK**

The Joint Venture is planning further drilling at the Fairservice Prospect within the Mavis Lake Project.



PIONEER 80%, REDUCING TO 25%. GOLD JOINT VENTURE WITH NORTHERN STAR MINERALS LIMITED (NST) 20% INCREASING TO 75%.

### **ACRA**

FOLLOWING THE COMMENCEMENT OF THE ACRA JOINT VENTURE, THE MAIN WORK BY NORTHERN STAR HAS BEEN PROJECT SET-UP AND LOGISTICS, INCLUDING A REVIEW AND RANKING OF EXISTING TARGETS.

Orientation drilling has been undertaken at four prospects: Kalpini South (9 holes), Deep River (5 holes), Cousin Jacks (3 holes) and North Brilliant (2 holes), with positive structural and geochemical information generated.

A recent mapping project has highlighted several areas that contain significant historic underground workings, previously undrilled, that warrant further work. Simultaneously an extensive regional exploration targeting campaign is being undertaken for the greater Project area.



Pioneer



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## GOLDEN RIDGE

THE COMPANY CONDUCTED A DETAILED REVIEW OF THE GOLDEN RIDGE DRILLING DATABASE SPECIFICALLY LOOKING FOR COBALT MINERALISATION AND SIX PROSPECTIVE AREAS, OCCURRING ALONG THE SOUTHERN AND WESTERN FLANKS OF THE BLAIR DOME, HAVE BEEN SELECTED FOR MORE DRILLING.

Lateritic Cobalt deposits are generally broad and shallow by nature, having been deposited in the weathered rock mantle, however mineralisation can thicken greatly along zones of permeability such as strike-parallel faults.

The tenor of cobalt values are at least the equivalent of other cobalt-laterites in the Kalgoorlie mineral district.

#### AT THE ROCKET PROSPECT

- BLD053: (diamond core) 12m at 0.266% Co from 106m
- GRAC949: (aircore) 14m at 0.211% Co from 43m
- GRAC906: (aircore) 10m at 0.257% Co from 34m
- GRA0010: (aircore) 9m at 0.373% Co from 20m

### **ANOMALY 13 PROSPECT**

- GOR0460: (RAB) 16m at 0.154% Co from 16m
- GOR0461: (RAB) 12m at 0.149% Co from 42m
- GOR0474: (RAB) 12m at 0.156% Co from 44m

### **ANOMALY 14 PROSPECT**

- GOR0388: (RAB) 12m at 0.139% Co from 36m
- GOR0404: (RAB) 30m at 0.147% Co from 36m (to EOH)
- GOR0409: (RAB) 6m at 0.275% Co from 18m
- GOR0413: (RAB) 6m at 0.308% Co from 18m (to EOH)
- GOR0418: (RAB) 18m at 0.191% Co from 42m (to EOH)

### **LEO DAM TREND**

- GOR1107: (RAB) 8m at 0.198% Co from 48m
- GRA0233: (aircore) 10m at 0.153% Co from 38m

### **OUTLOOK**

The Company has committed to drilling to develop cobalt mineralisation resources, and metallurgical investigations to determine the most appropriate extractive technology route.

100% PIONEER / WESTERN AUSTRALIA

### KANGAN PILBARA

### THE KANGAN PROJECT, LOCATED 80 KM SOUTH OF PORT HEDLAND IN WA.

The Pilbara District has recently attracted the attention of explorers after the discovery of gold associated with conglomerate horizons. Due to the age and the type of rocks present, geological comparisons have been drawn with the Witwatersrand gold deposits of South Africa.

The following targets are evident from the records of earlier explorers:

- Target 1: A 0.85 km target with rock chips up to 2,730ppb (2.73 g/t) Au and stream sediment geochemistry values up to 254ppb Au
- Target 2: A 0.65 km target with gold in soils (peak value 2,640ppb (2.64 g/t) Au) at the base of felsic volcanoclastic conglomerate and pebbly sandstone; open to the north
- Target 3: A 3km long target with gold in soils (peak value 2,654ppb (2.65 g/t) Au), striking sub-parallel to multiple stratigraphic units open to the north east
- Target 4: Gold workings, likely for alluvial gold
- Project rock-types include units of the Fortescue Group and De Grey Group (Mallina formation, Constantine sandstone/conglomerate and Honeyeater basalt)
- Target 5: Pioneer geologists have confirmed the presence of prospective pegmatites near where the Eastern-most tenement application abuts the Wodgina Lithium Mine tenements

#### **OUTLOOK**

Further field reconnaissance will include geochemical sampling, metal detecting and mapping to confirm mapped conglomerates, and to confirm the source of gold anomalies.

Mapping and further sampling of LCT pegmatite prospects near the Wodgina Lithium Mine will also continue.

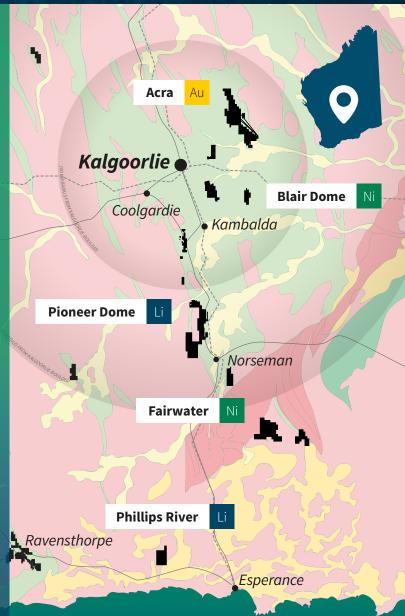








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### **FINANCIAL**

Share Price (12 October 2017)	\$0.019
Shares (PIO)	1,117.3 million
Quoted Options (PIOO)	44.3 million
Unquoted Options	55.3 million
12 month range - Share price	\$0.014-\$0.029
Cash (12 October 2017)	\$2.24 million
Market capitalisation	\$21.23 million

### **CORPORATE**

Craig McGown
David Crook
Wayne Spilsbury
Allan Trench
Julie Wolseley